

# 産業界の脱炭素

東京財団セミナー

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# ローカルとグローバルの 両方の観点から



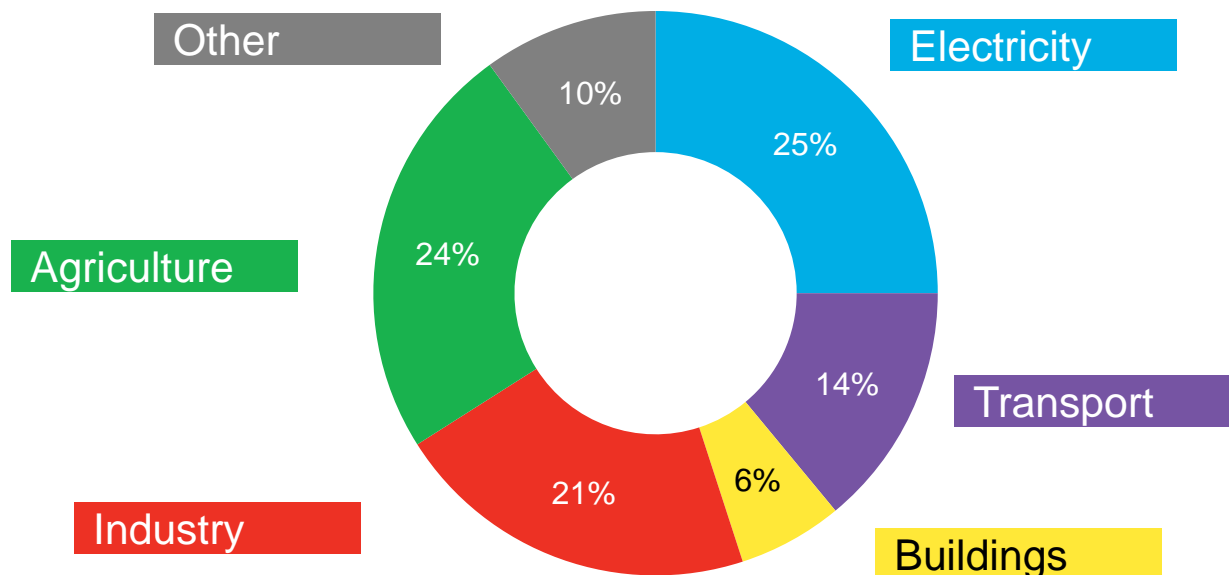
# 250

BNEF professionals in  
17 locations\*

\* Part of the Bloomberg LP network of  
19,000 employees in 176 locations.

# 世界の温室効果ガスセクター別内訳

## Greenhouse gas emissions by sector



Source: International Energy Agency

# BNEF coverage

Strategies for a cleaner, more competitive future

## コモディティ



ガス & LNG



電力



石油



カーボン



石炭



金属



ケミカル



農業

## セクター

### 電力市場



太陽光



風力



蓄電池



分散型電源



電力システム・ネットワーク

### 次世代交通システム



電気自動車



モビリティサービス



自動運転



次世代・飛行機



次世代・船舶

### 産業&ビル



低炭素の熱&冷却



3D印刷& グリーンマニュファクチャリング



循環型経済



コンポジットバイオプラスチック



省エネ

### 農業



農業& バイオテクノロジー



土地と水の利用



代替肉 & 食糧需要



食品廃棄物のマネジメント



農業のIT化 & サプライチェーン

## 最先端技術



デジタル産業技術



水素



バイオ燃料



CCUS

企業戦略・予測

政策・規制

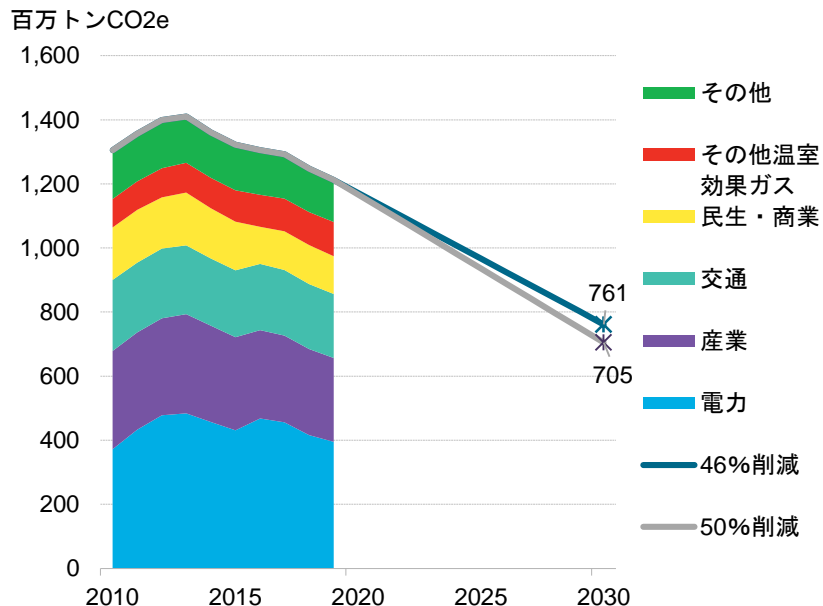
経済・ファイナンス

サステナビリティ

コンシューマー

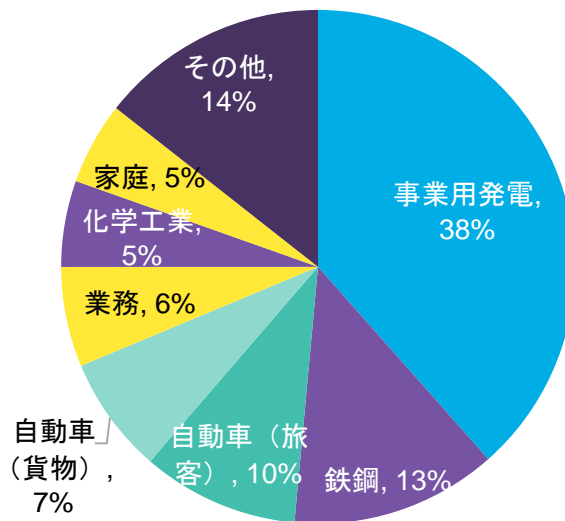
# 日本の排出量の23%が産業、18%が交通部門 電力、鉄鋼、交通の低炭素化が鍵

## 2030年46%削減への道筋



Source: 国立環境研究所、BloombergNEF

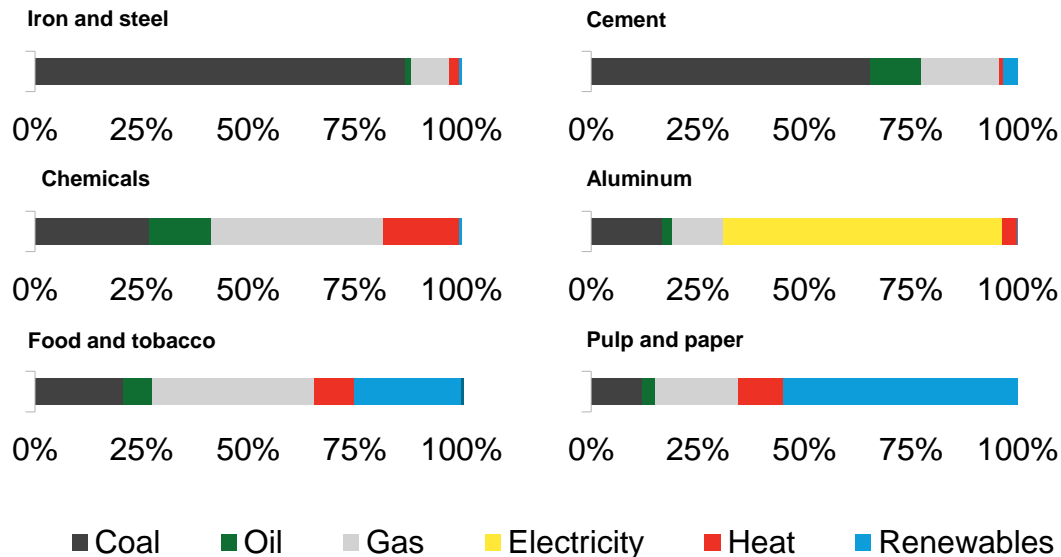
## セクター別二酸化炭素排出量内訳 2019年度



Source: 国立環境研究所、BloombergNEF

# 脱炭素が比較的容易なセクターとそうでないセクター

Share of energy supply for industrial process heat, 2018



Source: BloombergNEF, IEA

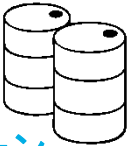
# 非電力部門、脱炭素化の選択肢

1  エネルギー効率

2  電化と再エネ

3  リサイクル

4  代替素材

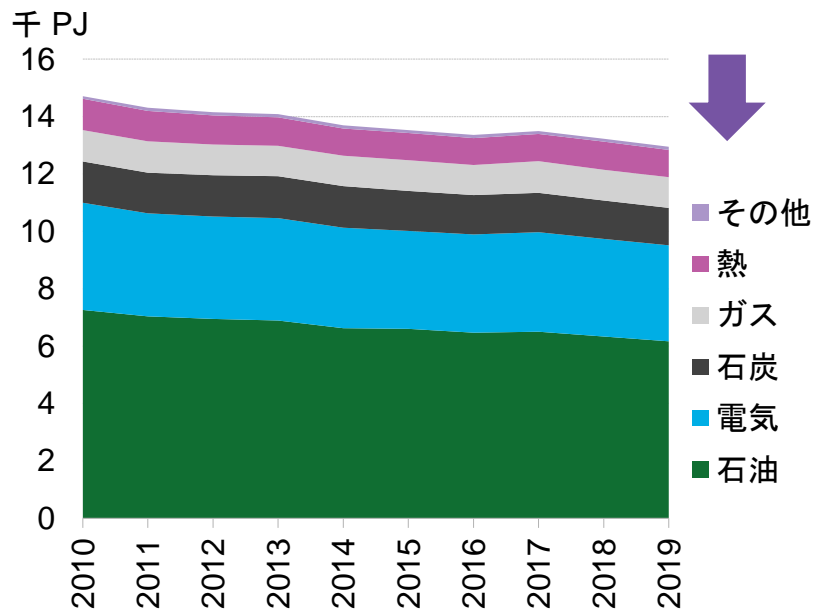
5  水素・クリーン  
燃料  
CCS

Source: BloombergNEF

# 2030年までの低炭素化の方策

## エネルギー効率化、電化、再エネ

### 最終エネルギー消費



Source: 経済産業省、BloombergNEF

### 排出量削減の方策

- エネルギー消費量を下げる
- 電気の最終エネルギー消費での比率を上げる
- その電気を再エネで賄う



# 再エネは2030年46%削減に最優先 電化及び省エネとセットでの再エネ

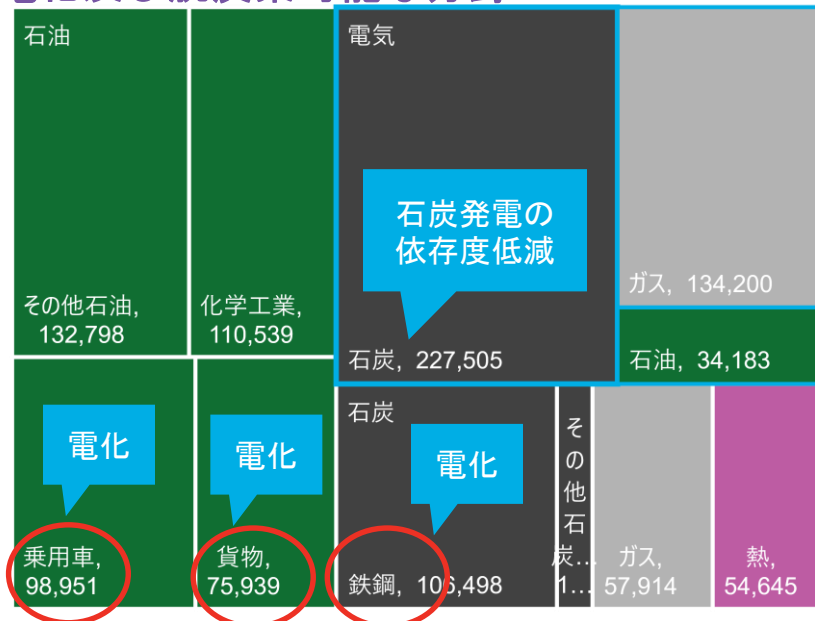
## 再エネの拡大による利益

- 電力分野の脱炭素
  - 石炭火力発電の依存度低減も必要
- 電力以外の分野の脱炭素
- 日本企業の競争力維持と強化
  - 再エネが商取引の条件となる

## 電化と再エネで脱炭素可能な分野例

- 交通: 乗用車及び貨物自動車の電化
- 鉄鋼: 電炉への切り替え

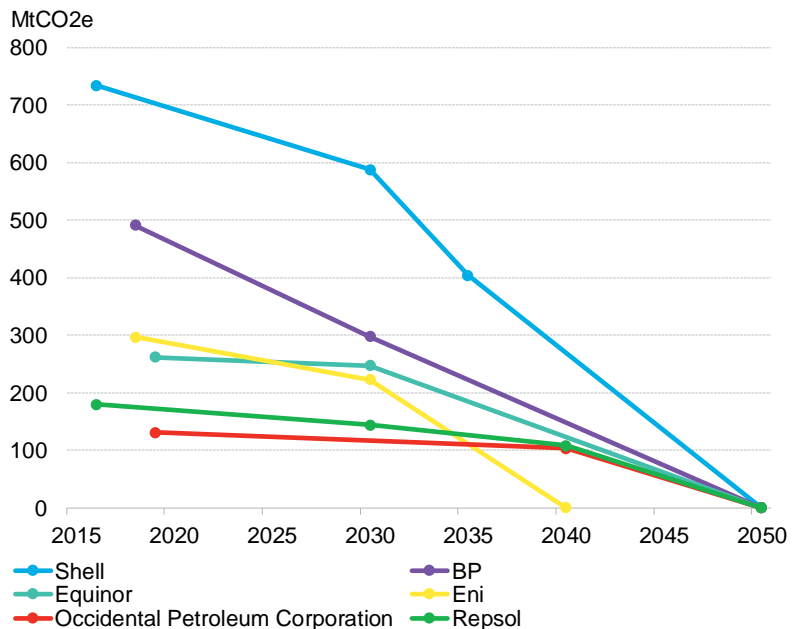
## エネルギー消費起源の排出量内訳及び 電化及び脱炭素可能な分野



Source: 経産省、BloombergNEF Note: BNEF推計値

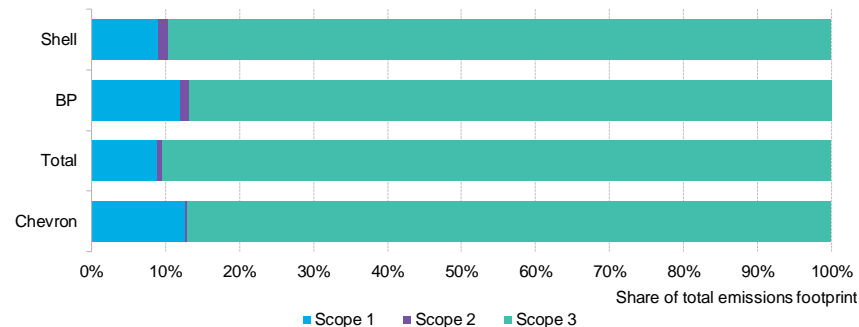
# 石油ガス企業にも脱炭素の動き

## 石油ガス企業のネットゼロ目標と目標年



Source: BloombergNEF

## Scope 1, 2 3 排出量



Source: BloombergNEF

# Scope 3 目標と戦略の違い

## 石油ビジネスからの脱却を目指す企業も

Target type

No scope 3 vision



Chevron Exxon

Oil + clean energy vision



Shell Total Eni

Zero oil vision



BP Repsol Equinor

Strategic vision implied by target

Continue with core business of producing oil and gas

Remain oil and gas producers but also become significant chemical and clean energy businesses

Long- term vision to no longer be oil and gas producers

Source: BloombergNEF

# 日本が水素を追求する理由： エネルギー安全保障及び脱炭素化



水素・燃料電池戦略ロードマップ

水素は...海外...化石燃料に  
大きく依存した我が国の一  
次エネルギー供給源を多  
様化させるポテンシャルを  
有する...さらに...  
したエネルギー源とすること  
が可能である

## 水素の輸入はエネルギー安全保障を高めない

水素・燃料電池戦略協議会

水素・燃料電池戦略ロードマップ 4頁

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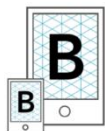
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